

PRELIMINARY ASSESSMENT REPORT

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

EPA CERCLA ID NO.: TXD059345116

Prepared for

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Contract No.: 68-W5-0019
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September 1997

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PRELIMINARY ASSESSMENT REPORT

WOOD PROTECTION COMPANY
HOUSTON, TEXAS

EPA CERCLA ID NO.: TXD059345116

SEPTEMBER 1997

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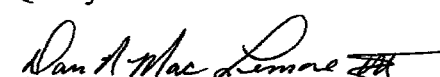
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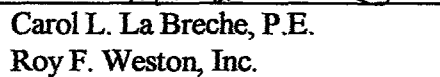
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PRELIMINARY ASSESSMENT REPORT

WOOD PROTECTION COMPANY HOUSTON, TEXAS

EPA CERCLA ID NO.: TXD059345116

TABLE OF CONTENTS

SECTION	TITLE	PAGE
1	INTRODUCTION.....	1-1
1.1	OBJECTIVES OF THE INVESTIGATION.....	1-1
1.2	SCOPE OF WORK.....	1-1
1.3	REPORT FORMAT.....	1-2
2	SITE CHARACTERISTICS AND CONCERNS.....	2-1
2.1	SITE CHARACTERISTICS.....	2-1
2.1.1	Site Location.....	2-1
2.1.2	Site Description.....	2-1
2.1.3	Site Ownership.....	2-2
2.1.4	Site Operational History.....	2-2
2.1.5	Regulatory Compliance History.....	2-3
2.1.6	Previous Investigations.....	2-3
2.1.7	Nearby Land Use.....	2-4
2.2	SOURCE WASTE CHARACTERISTICS AND SITE CONCERNS.....	2-5
2.2.1	Known and Potential Sources of Hazardous Substances.....	2-5
2.2.1.1	3,000-Gallon Diesel Tank.....	2-5
2.2.1.2	Aboveground Tanks, Pressure Treating Cylinders, and Sumps.....	2-5
2.2.1.3	Drum Storage.....	2-6
2.2.2	Site Concerns.....	2-6
3	GROUNDWATER PATHWAY.....	3-1
3.1	HYDROGEOLOGIC SETTING.....	3-1
3.1.1	Geologic Framework.....	3-1
3.1.2	Groundwater Conditions.....	3-2
3.2	LIKELIHOOD OF RELEASE.....	3-2
3.2.1	Depth to Groundwater.....	3-2
3.2.2	Net Precipitation.....	3-3

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PRELIMINARY ASSESSMENT REPORT

WOOD PROTECTION COMPANY HOUSTON, TEXAS

EPA CERCLA ID NO.: TXD059345116

TABLE OF CONTENTS (Continued)

SECTION	TITLE	PAGE
3.2.3	Thickness of Impermeable Layer.....	3-3
3.2.4	Hydraulic Conductivity of Impermeable Layer.....	3-3
3.3	GROUNDWATER PATHWAY TARGETS.....	3-3
3.3.1	Nearest Well.....	3-3
3.3.2	Other Nearby Wells.....	3-3
3.3.3	Well Head Protection Areas.....	3-4
3.3.4	Groundwater Resources.....	3-4
3.4	GROUNDWATER PATHWAY CONCLUSIONS.....	3-4
4	SURFACE WATER PATHWAY.....	4-1
4.1	HYDROGEOLOGIC SETTING.....	4-1
4.1.1	Overland Flow Segment.....	4-1
4.1.2	Probable Point of Entry.....	4-1
4.1.3	Surface Water Flow Path.....	4-1
4.2	LIKELIHOOD OF RELEASE.....	4-2
4.2.1	Distance to Surface Water.....	4-2
4.2.2	Flood Frequency.....	4-2
4.2.3	2-Year, 24-Hour Rainfall.....	4-2
4.2.4	Flood Containment.....	4-2
4.3	SURFACE WATER PATHWAY TARGETS.....	4-2
4.3.1	Drinking Water Intakes.....	4-2
4.3.2	Wetlands and Other Sensitive Environments.....	4-2
4.3.3	Fisheries.....	4-3
4.4	SURFACE WATER PATHWAY CONCLUSIONS.....	4-3
5	SOIL EXPOSURE.....	5-1
5.1	SURFICIAL CONDITIONS.....	5-1
5.1.1	Soil Type.....	5-1

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PRELIMINARY ASSESSMENT REPORT

WOOD PROTECTION COMPANY HOUSTON, TEXAS

EPA CERCLA ID NO.: TXD059345116

TABLE OF CONTENTS (Continued)

SECTION	TITLE	PAGE
	5.1.2 Areas of Contamination.....	5-1
5.2	LIKELIHOOD OF EXPOSURE	5-2
	5.2.1 Attractiveness of the Site.....	5-2
	5.2.2 Site Accessibility.....	5-2
5.3	SOIL EXPOSURE TARGETS.....	5-2
	5.3.1 Resident Population.....	5-2
	5.3.2 Nearby Population.....	5-2
	5.3.3 Terrestrial Sensitive Environments.....	5-2
	5.3.4 Resources.....	5-3
5.4	SOIL EXPOSURE CONCLUSIONS.....	5-3
6	AIR PATHWAY	6-1
6.1	ATMOSPHERIC CONDITIONS.....	6-1
	6.1.1 Meteorological Information.....	6-1
	6.1.2 Air Monitoring Results.....	6-1
6.2	LIKELIHOOD OF RELEASE.....	6-1
6.3	AIR PATHWAY TARGETS.....	6-1
	6.3.1 Population Within 4 Miles.....	6-1
	6.3.2 Sensitive Environments.....	6-2
	6.3.3 Resources.....	6-2
6.4	AIR PATHWAY CONCLUSIONS.....	6-2
7	CONCLUSIONS	7-1
8	REFERENCES.....	8-1

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PRELIMINARY ASSESSMENT REPORT

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

EPA CERCLA ID NO.: TXD059345116

TABLE OF CONTENTS (Continued)

SECTION	TITLE	PAGE
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APPENDICES

- A Photograph Documentation
- B References

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PRELIMINARY ASSESSMENT REPORT

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

EPA CERCLA ID NO.: TXD059345116

LIST OF FIGURES

FIGURE	TITLE	PAGE
2-1	Site Location Map.....	2-7
2-2	Site Area Map	2-8
2-3	Site Plan Map	2-9
3-1	Water Well Locations.....	3-5
4-1	Surface Water Pathway Map.....	4-4

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PRELIMINARY ASSESSMENT REPORT

WOOD PROTECTION COMPANY HOUSTON, TEXAS

EPA CERCLA ID NO.: TXD059345116

LIST OF TABLES

TABLE	TITLE	PAGE
2-1	Summary of Source Waste Characteristics.....	2-10
3-1	Water Well Locations.....	3-6
3-2	Contaminated Water Well Data.....	3-7
4-1	Surface Water Drainage Pathway Summary	4-5
4-2	Federally Listed Threatened and Endangered Species.....	4-6
5-1	Contaminated Soil Data	5-4
5-2	Nearby Population Within 1 Mile.....	5-6
6-1	Nearby Population Within 4 Miles	6-3

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SECTION 1 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), Roy F. Weston, Inc. (WESTON®) has completed a Preliminary Assessment (PA) of the Wood Protection Company (WPC) site (EPA CERCLA Identification Number TXD059345116) in Houston, Harris County, Texas. The U.S. Environmental Protection Agency (EPA) Region 6 retained WESTON to complete this investigation under EPA Contract Number 68-W5-0019 and Technical Direction Document Number 06-97-03-0004. This document represents the final report for the PA. The purpose of this PA Report is to summarize conditions at the site based on the results of the PA.

1.1 OBJECTIVES OF THE INVESTIGATION

The PA is generally the first screening investigation in a series of site assessments that EPA may complete at a known or potential hazardous waste site being investigated under CERCLA/SARA prior to its possible inclusion on the National Priorities List (NPL). The PA has two primary objectives:

- Identify known or potential sources of hazardous substances at the site and evaluate the threat that migration or exposure of hazardous substances from the site may pose to human health and the environment.
- Collect information that can be used to assess the site using EPA's Hazard Ranking System (HRS) to help determine whether further investigation of the site under CERCLA/SARA is warranted to list the site on the NPL.

EPA will use the information obtained from the PA to help prioritize further work for the site. Based on the results, EPA may decide that additional investigation of the site is required or assign No Further Remedial Action Planned (NFRAP) status to the site.

1.2 SCOPE OF WORK

The PA is a screening investigation of the site. The PA scope of work is focused on characterizing the site through the completion of limited site-related research and site reconnaissance activities. As part of this PA, WESTON performed the following major tasks:

- A site-specific Health and Safety Plan (HASP) was prepared to provide a detailed plan of action for maintaining health and safety during the PA site reconnaissance.
- WESTON personnel performed a site reconnaissance on 21 May 1997 in accordance with WESTON's Generic Preliminary Assessment Work Plan (Document Control Number 4603-22-0006), dated 15 August 1991, to document current site conditions, to identify potential sources of hazardous substances, to evaluate the likelihood for a

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release from these sources, to identify potential migration and exposure pathways, and to identify receptors (or targets) of hazardous substance releases. The site visit included both an on-site reconnaissance and examination of the site vicinity. The reconnaissance team recorded site observations in a logbook and on a checklist and took photographs to document site conditions.

- Information concerning the environmental setting of the site was obtained to describe the groundwater, surface water, soil exposure, and air pathways.
- Available regulatory compliance files from federal, state, and local government agencies were reviewed, and telephone interviews were conducted with people knowledgeable of the site and its surroundings.
- A PA Report was prepared.

1.3 REPORT FORMAT

The PA Report is presented in a format that is intended to facilitate evaluation of the site using the HRS. The report contains the following sections:

- Section 1—Introduction
- Section 2—Site Characteristics and Concerns
- Section 3—Groundwater Pathway
- Section 4—Surface Water Pathway
- Section 5—Soil Exposure
- Section 6—Air Pathway
- Section 7—Conclusions
- Section 8—References

Tables and figures associated with each section of the report are provided at the end of the section in which they are first cited. Additional information is provided in appendices following the text of the report. Photographs of the site are provided in Appendix A, and copies of the references used as sources of information for the site are provided in Appendix B.

SECTION 2

SITE CHARACTERISTICS AND CONCERNS

WESTON collected and reviewed available background information regarding the location, description, operational history, and regulatory compliance of the site. The discussion in this section of the report is based on this background information, which is referenced throughout the text.

2.1 SITE CHARACTERISTICS

The characteristics of the site are summarized in this subsection as follows:

- Site location
- Site ownership and operational history
- Site description
- Site regulatory compliance history
- Previous investigations
- Nearby land use

2.1.1 Site Location

The WPC site is located at 5151 South Loop East (Interstate Route 610), Houston, Texas, on the north side of the Interstate, just west of S. Park Boulevard and is accessible by the South Loop East service road. The geographic coordinates of the site are approximately 29°41'09" north latitude and 95°20'36" west longitude (Reference 1). A Site Location Map based on a Rand-McNally road map and a Site Area Map based on U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Reference 2) are provided as Figures 2-1 and 2-2, respectively. WESTON initially located the site based upon information provided in EPA project files.

2.1.2 Site Description

The property is the location of an active wood treating facility that occupies approximately 5 acres (Reference 3). The site consists of several treated and raw-wood storage areas, office and shop buildings, parking areas, a wood treatment area and drip pad, a dry kiln, and storage warehouse. All areas of potential contact to preservative drippage are concrete covered and curbed. An employee decontamination station is situated in the wood treatment area inside the curbed concrete drip pad. The facility is restricted from public access by a gated, chain link fence topped with three-strand barbed wire.

Notable site observations during the field reconnaissance include the following:

- Visible ponding of rainwater occurred at the north facility fenceline beyond the two stormwater culverts.

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- Drums marked "Hazardous Waste" were staged on wooden pallets in a satellite storage area located on the east side of the drip pad for collection of floating debris from the wood treating process and solid sludge from the recycling sumps.
- Drippage from the wood treating process was watered and swept into drip pad sumps for recycling.

A Site Plan, Figure 2-3, was developed based on observations made during the site visit and information gathered during this PA. Copies of the site reconnaissance checklist and the PA logbook are provided as References 4 and 5.

2.1.3 Site Ownership

Approximately 98% of the 5-acre facility is owned by WPC; WPC is a wholly owned subsidiary of Osmose Wood Preserving Company (Reference 3). The C.E. King estate formerly owned and leased the east portion of the facility to WPC, but WPC purchased that portion in 1994. WPC purchased the west portion of the facility in 1972.

The other 2% of the 5-acre facility, approximately 5,000 square feet, is owned and leased to WPC by C.W. Davis of Nacogdoches, Texas (Reference 3). That portion of the property is located near the center gate of the facility, adjacent to the fence boundary at the South Loop East service road; it is used as an employee parking area.

Mr. Joel Tigett is the president and identified himself as having authority to grant site access. Mr. Tigett signed an EPA access agreement on 5 May 1997. Copies of the PA site access letter and access agreement are provided as Reference 6.

2.1.4 Site Operational History

The site has been in operation as a wood treating facility since 1952 (Reference 5). The owner was Pentawood Life Vacuum Treated Company (Reference 7). Pentachlorophenol (PCP) was used from 1952 to 1972. Since Osmose Wood Preserving Company purchased part of the facility in 1972, only chromated copper arsenate (CCA) and a flame retardant have been used for wood treating (Reference 5). WPC historically used a flame retardant containing ammoniated inorganic phosphates, but discontinued that practice in the early 1990s. Creosote was reportedly never used on-site (Reference 5).

No documentation exists in the file on waste handling from 1952 to 1972. Contaminated soil from wood treatment chemicals prior to June 1980 was removed for off-site disposal (Reference 8). In June 1980 a concrete drip pad was poured to collect for recycle all chemical drip, leakage, and/or spillage from the wood treating process (Reference 5).

Currently, the CCA is recycled by drainage from the treating cylinder into a collection sump and is then pumped into a work tank (Reference 5). Sulfuric acid is periodically added to break down any

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accumulated sludge (Reference 5). Since CCA is recycled, no liquid waste is presently generated at the site. Sludge from the sumps and floating wood debris collected from the process are collected in 55-gallon drums for Resource Conservation and Recovery Act (RCRA) small generator disposal.

A 2,000-gallon CCA spill occurred on 30 June 1986 inside the tank storage area and on some surrounding soil (Reference 5). The top 12 inches of soil in that area were removed for off-site disposal.

2.1.5 Regulatory Compliance History

WESTON reviewed available EPA and Texas Natural Resource Conservation Commission (TNRCC) files and interviewed authorities from regulatory agencies to collect background information regarding the regulatory compliance history of the site. This information is summarized in the following paragraphs.

A stormwater compliance inspection by Texas Water Commission (TWC) on 12 October 1982 identified a pressure cylinder leak. The facility later corrected and improved runoff controls (Reference 9).

A letter of Texas Administrative Code (TAC) noncompliance issued by TWC on 15 February 1983 identified deficiencies that were later reportedly resolved (Reference 9). No further details were noted.

WPC was identified as a potential hazardous waste site under CERCLA by TWC in 1984 after a file review (Reference 9). This was based on the potential for soil and groundwater contamination from creosote, although no wood preservatives other than PCP and CCA were documented as being in use since WPC's inception in 1952.

The TWC performed an investigation of WPC on 1 July 1986 after receiving an anonymous complaint of a CCA spill (Reference 8). The spill was retained by a wall, and 12 inches of contaminated soil were removed and shipped off-site for disposal.

2.1.6 Previous Investigations

WESTON reviewed available files and interviewed authorities from regulatory agencies to collect background information regarding previous investigations at the WPC site. This information is summarized in the following paragraphs.

A Potential Hazardous Waste Site Identification and Preliminary Assessment Report (RCRA 3012 PA) was prepared by Engineering Science, Inc. on 18 December 1984 following a 1 November 1984 off-site visit (Reference 9). Based on available file information and off-site surveillance, the report described the facility setting, site conditions, and regulatory compliance history. The site was incorrectly identified as 10 acres and as having contamination potential from creosote, PCP, and trace organics such as dioxin. In closing, the RCRA 3012 PA recommended a low priority site inspection of

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the site to confirm past and present waste management practices and to determine whether nearby surface or groundwater could be impacted by the facility.

A Jones and Neuse, Inc. Site Inspection was performed for the TWC (presently TNRCC) on 30 March 1987. It confirmed that waste was appropriately managed and collected for off-site disposal (Reference 10).

A Field Investigation Team (FIT) Task Request from EPA dated 6 April 1988 indicated that WPC was a small quantity generator only. It concluded that the facility did not appear to be a potential NPL candidate due to insufficient target population and further recommended no additional activity under CERCLA (Reference 11).

A PA reassessment was completed 17 June 1988 by FIT contractor ICF Technology Incorporated (Reference 8). Based on all information available, FIT concluded that the facility would not generate an HRS value sufficient to qualify for NPL and therefore recommended no further CERCLA action.

An Environmental Audit prepared by Ott Engineering, Inc. (Ott) in August 1988 presented raw data from shallow groundwater (approximately 40 feet) (Reference 12). The report concluded that groundwater containing PCP in unknown concentrations probably migrated off-site and that off-site concentration would probably be minimal (Reference 13).

A Hydrogeologic Study for Wood Protection Company prepared by Ott, 31 March 1989, presented contour maps of PCP in groundwater (Reference 7). Only a portion of the report is available; therefore, report conclusions were found in a separate report by Engineering-Science, Inc. The Engineering-Science, Inc. Site Screening Inspection (SSI) indicated that the hydrogeologic study concluded that the surface water and groundwater pathways have a slightly higher exposure potential than the other pathways, but limited potential targets (Reference 13).

Engineering-Science, Inc. (ES) conducted a SSI at the WPC site in December 1992, evaluating groundwater, surface water, soil exposure, and air pathways of contaminant migration. ES concluded that primary targets of concern existed for the soil exposure and air pathways; however, exposure potential is minimal for these pathways.

ES conducted a SSI, Part 2 in February 1993, evaluating groundwater, surface water, soil exposure, and air pathways of contaminant migration. ES concluded that sample results indicated a release from WPC by the groundwater pathway and that the presence of contamination in surface soils and sediments indicated a potential for release by the surface water and air pathways (Reference 14).

2.1.7 Nearby Land Use

Land use in the vicinity of the site was observed during the PA reconnaissance. Adjacent land use is commercial (west), light industrial (east), and residential (north and south). The South Loop East service road lies immediately south of the site, and elevated railroad tracks lie immediately north of the site. An Entex natural gas right-of-way lies immediately east of the site (Reference 4).

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2.2 SOURCE WASTE CHARACTERISTICS AND SITE CONCERNS

The potential sources identified at the site are described in this subsection along with site-related concerns regarding the migration of hazardous substances attributable to the site through the groundwater, surface water, soil exposure, and air pathways.

2.2.1 Known and Potential Sources of Hazardous Substances

Based on available background information, the following potential sources have been identified at the site:

- One aboveground 3,000-gallon diesel tank.
- Thirteen aboveground chemical and water storage tanks, pressure treating cylinders, and sumps.
- Drum storage of solid and sludge waste material.

Hazardous substances on-site appear to be well contained and therefore provide low risks as potential contaminants. These potential source areas are summarized in Table 2-1 and are described in further detail in the following paragraphs.

2.2.1.1 3,000-Gallon Diesel Tank

The 3,000 gallon diesel tank is located south of the shop building and north of the employee parking lot area. The tank and its appurtenances are protected from impact by a guard rail. It sits on a concrete slab and has secondary containment (Reference 4).

2.2.1.2 Aboveground Tanks, Pressure Treating Cylinders, and Sumps

All of the tanks, pressure treating cylinders, sumps, and associated pipelines are found within the treatment area, which is located on the southwest corner of the facility. Secondary containment is provided around the tanks, and the entire facility is covered with concrete paving surrounded by a 6-inch curb. In June 1980, the WPC constructed an impermeable (synthetically sealed) reinforced concrete drip pad to catch wood treating chemicals, precipitation, and clean water wash (Reference 13). The pad is sloped to recycling sumps. The recycle sumps are periodically treated with sulfuric acid to breakdown any accumulated sludge. All liquids from this process are recycled to the wood treating cylinders.

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2.2.1.3 Drum Storage

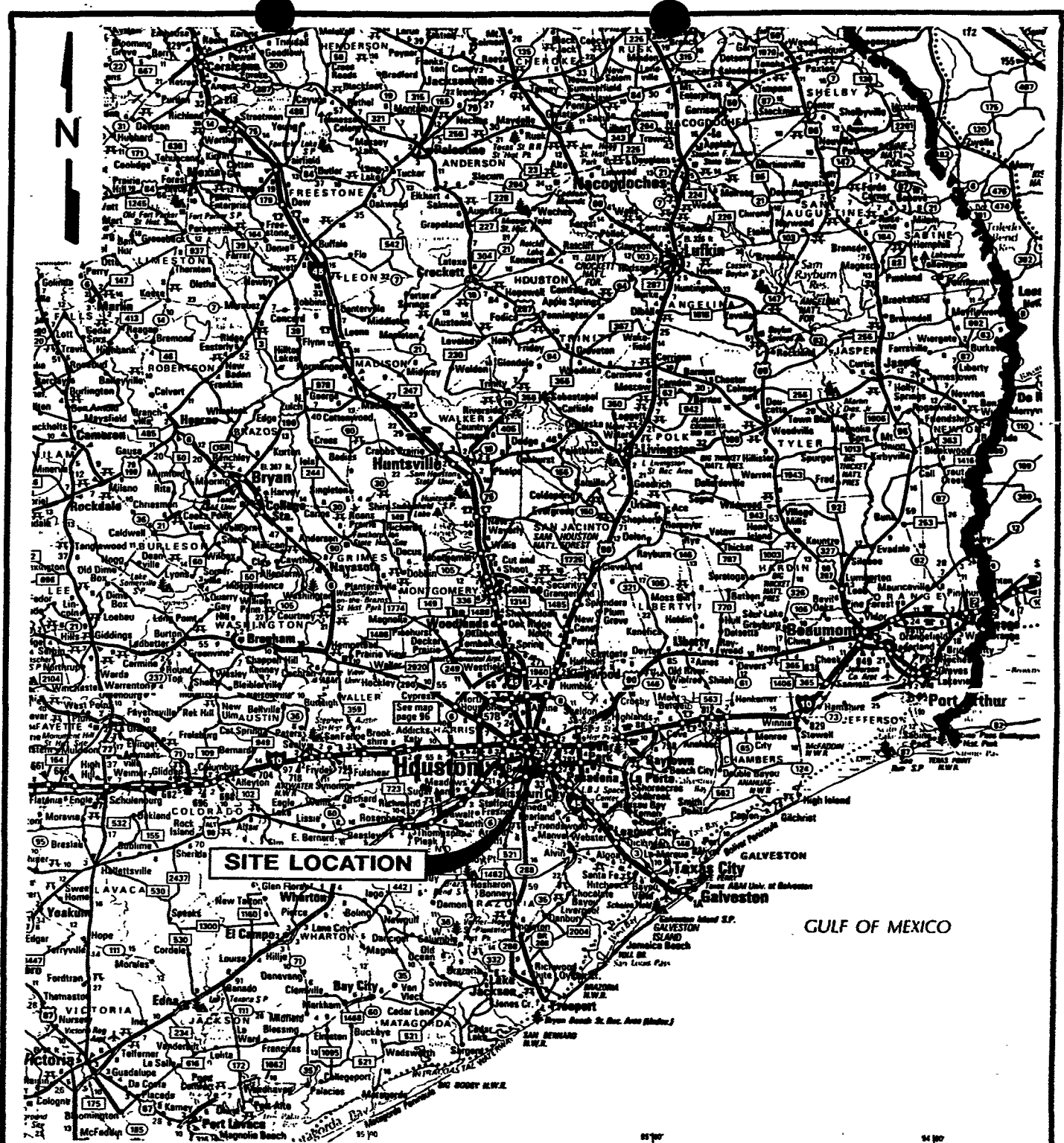
Solids from the recycle sumps are accumulated in drums with any floating wood particles and debris contaminated with CCA. WPC disposes of these drums off-site under RCRA small quantity generator status.

2.2.2 Site Concerns

The migration of site-related hazardous substances from sources at the site and the exposure of humans and other environmental receptors to the hazardous substances are of minimal concern because of limited primary and secondary targets. Past releases have been documented. Possible concerns for the groundwater, surface water, soil exposure, and air pathways include the following:

- The groundwater pathway is a minor concern because a release of wood-treating contaminants to shallow groundwater (40 feet) has been documented based on the detection of CCA and PCP constituents in past monitoring well data. The constituents include PCP, arsenic, and chromium (Reference 14). There is one domestic and one irrigation well, both approximately 410 feet deep and ¼ mile from the site, limiting the target population. The waste sources currently have containment features that would inhibit the release of hazardous substances to groundwater. Refer to Section 3 for more information.
- The surface water pathway is not a concern because perennial surface water is not in close proximity to the site and no data exists to indicate an observed release. No potential exists for the migration of hazardous substances by runoff north of the facility during periods of high-intensity precipitation. Refer to Section 4 for more information.
- The soil exposure pathway is of minor concern. Known contaminated on-site soil was removed and the process area covered with concrete. The presence of off-site PCP, arsenic, copper, and chromium indicates a potential historical release by the soil exposure pathway in off-site samples north of the facility. Low levels of metals have been documented on-site west of the process area. The primary targets would be the residents in the surrounding neighborhoods, but a soil sample in that vicinity does not indicate contaminant migration. Refer to Section 5 for more information.
- The air pathway is of limited potential concern because no releases to the atmosphere have been documented at the site. Refer to Section 6 for more information.

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MAP PREPARED FROM
RAND McNALLY ROAD ATLAS
TEXAS
1994 EDITION

0 150 300

APPROXIMATE SCALE IN MILES

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 2-1

SITE LOCATION MAP

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

CERCLA ID. NO. : TXD059345116

EPA REGION 6

START SITE INSPECTION

W.O. NO. : 11098-122-033-0001

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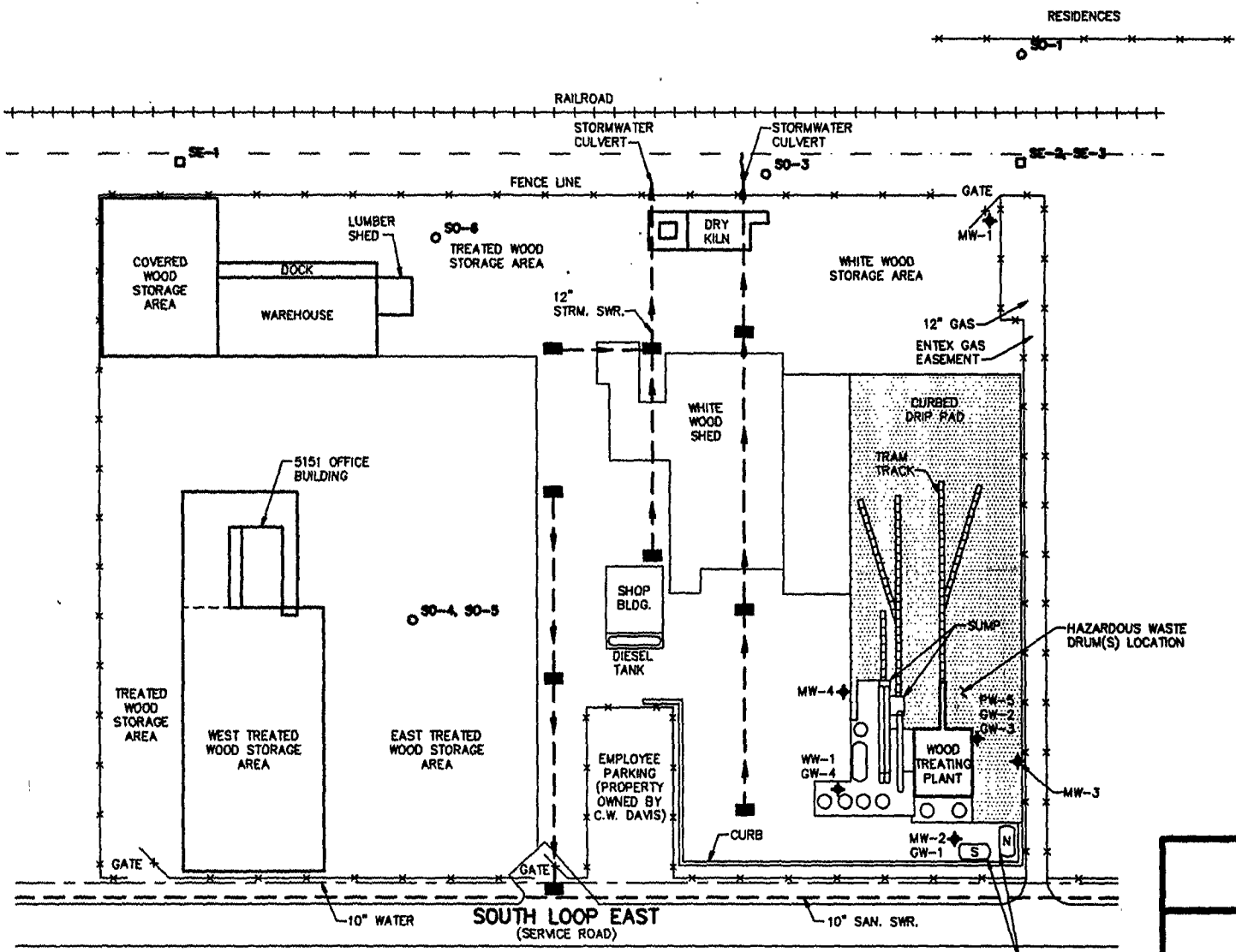


FIGURE 2-3

SITE PLAN MAP

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

CERCLA ID. NO. : TXD059345116

EPA REGION 6

START SITE INSPECTION

W.O. NO. : 11098-122-033-0001

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**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

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**TABLE 2-1
SUMMARY OF SOURCE WASTE CHARACTERISTICS**

SOURCE NAME	LOCATION	SOURCE TYPE	ESTIMATED WASTE QUANTITY	DESCRIPTION OF THE SOURCE
Diesel Tank	West of Process Area	Diesel Fuel	3,000 gallons	Diesel Fuel Tank
CCA Storage Tanks	Process Area	Arsenic, Chromium, Copper	74,400 gallons	Storage Tanks
3 Pressurized Treating Cylinders	Process Area	Arsenic, Chromium, Copper	29,000 gallons	Treating Cylinders
Sumps	Process Area	Arsenic, Chromium, Copper	18,000 gallons	Recycling Sumps
Hazardous Waste Drums	Near Process Area	Arsenic, Chromium, Copper	55 gallons	55-Gallon Drum

SOURCES: SSI, Part 1 Report (Reference 13).
Site Recon List, WESTON (Reference 4).
Field Logbook Notes, WESTON (Reference 5).

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SECTION 3

GROUNDWATER PATHWAY

This section provides a discussion of the groundwater pathway, one of four major pathways of potential hazardous waste migration assessed in this report. The discussion focuses on the aquifer characteristics of the region, the likelihood of a release to groundwater, and the potential targets of hazardous waste migration through the groundwater pathway.

3.1 HYDROGEOLOGIC SETTING

This subsection presents important factors related to the geologic framework and groundwater conditions at the site.

3.1.1 Geologic Framework

The WPC site is located in the Houston area on the Quaternary Coastal Plain of Texas. Geologically, this area consists of fluvial, deltaic, coastal marsh, and lagoonal deposits. The site is underlain by the Pleistocene-age Beaumont Formation (Reference 13). From youngest to oldest, the geologic units nearest to the surface at the site include the following (References 15 and 16):

- The Holocene-age Alluvium
- The Pleistocene-age Beaumont Formation
- The Pleistocene-age Montgomery Formation
- The Pleistocene-age Bentley Formation
- The Pleistocene-age Willis Formation
- The Miocene-age Fleming Formation
- The Miocene-age Catahoula Formation

The Beaumont Formation consists mostly of clay, silt, and relatively little sand. This formation was primarily deposited in a fluvial environment consisting of numerous back water swamps and, to a lesser extent, coastal marshes and mud flats. The overall thickness of the Beaumont Formation can be up to approximately 100 feet (References 15 and 16).

The Montgomery Formation underlies the Beaumont Formation. The Montgomery Formation consists of clay, silt, and very minor siliceous gravel of granule to pebble size. This fluvial deposit can be up to approximately 100 feet (References 15 and 16).

The Bentley Formation underlies the Montgomery Formation. The Bentley Formation consists of fluvial deposits of clay, silt, sand, and minor amounts of gravel. The thickness of the Bentley Formation can be up to approximately 100 feet (References 15 and 16).

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The Willis Formation underlies the Bentley Formation. The Willis Formation consists of fluvial deposits of clay, silt, sand, and siliceous gravel of granule to pebble size with some petrified wood. The overall thickness of the Willis Formation can be up to approximately 100 feet (References 15 and 16).

The Fleming Formation underlies the Willis Formation. The Fleming Formation consists of clay, silt, sand, and granule to pebble size gravel with some petrified wood. The thickness of the Fleming Formation can be up to approximately 1,450 feet (References 15 and 16).

The Catahoula Formation underlies the Fleming Formation. The Catahoula Formation consists of mudstone in the upper part and coarse-grained quartz sand in the lower 10 to 80 feet. The overall thickness of the Catahoula Formation can be up to 300 feet (References 15 and 16).

The actual thicknesses of the above-described formations at the site are unknown based on information currently available to WESTON.

3.1.2 Groundwater Conditions

Groundwater at the WPC site is from the Gulf Coast aquifer. This aquifer extends to a maximum depth of approximately 3,000 feet below ground surface (bgs). The principal water-bearing units within the Gulf Coast aquifer are the Chicot and Evangeline aquifers. The Chicot aquifer occurs in the Holocene alluvium through the Willis Formation and is believed to be between 40 and several hundred feet bgs at the site. However, documentation indicating the depth of the saturated zone in the area of the site was not obtained. Wells in the area of the site are believed to be completed within this aquifer because the Gulf Coast aquifer underlies the entire San Jacinto River Basin, which is the basin where the site is located (References 17 and 18).

The Evangeline aquifer underlies the Chicot aquifer and is located within the Fleming Formation (References 17 and 18).

Large capacity wells in the Gulf Coast aquifer have an average yield of 1,800 gallons per minute (gpm) and a maximum yield ranging up to 2,900 gpm. In the general area of the site, large capacity wells are likely to be in the lower Chicot or Evangeline aquifers several hundred feet below the ground surface.

3.2 LIKELIHOOD OF RELEASE

Important factors related to the likelihood of a release from a source of hazardous substances at the site to groundwater are presented in this section.

3.2.1 Depth to Groundwater

Based on the descriptions of the regional aquifers in the area, the depth to the most shallow zone at the site that produces sufficient water for domestic or agricultural uses is approximately 40 feet (References 17 and 18).

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3.2.2 Net Precipitation

The average annual precipitation in the area of the site is approximately 44 inches. The annual average gross lake surface evaporation rate in the area of the site is approximately 52 inches. Therefore, the average annual net precipitation in the area of the site is approximately minus 8 (-8) inches (Reference 19).

3.2.3 Thickness of Impermeable Layer

The clay units of the Beaumont Formation are considered to be the most impermeable layers between the surface and groundwater in the Chicot aquifer. The thickness of the near surface clay at the site is estimated to be approximately 30 to 50 feet (References 17 and 18).

3.2.4 Hydraulic Conductivity of Impermeable Layer

The hydraulic conductivity of the impermeable layer is estimated to be on the order of 1×10^{-7} centimeters per second (Reference 20). This hydraulic conductivity value has not been verified by testing clay samples from the site.

3.3 GROUNDWATER PATHWAY TARGETS

The potential receptors, or targets, of the groundwater pathway include the population and resources that rely on local aquifers as a source of water supply. The targets identified for the groundwater pathway are discussed in the following subsections. Drinking water wells within 1 mile of the site are illustrated in Figure 3-1 and listed in Table 3-1.

3.3.1 Nearest Well

According to the Agency of Information Consultants (AIC), the nearest known active wells to the WPC site are an irrigation well and a private domestic well (both shown as 4(1) on Figure 3-1 and listed in Table 3-1), located approximately ¼ mile northwest of the site (Reference 21).

3.3.2 Other Nearby Wells

Six groundwater wells exist on the WPC site: four monitoring, one recovery, and one water well. Figure 2-3 shows groundwater well locations. In the spring of 1988, the WPC contracted with Ott to conduct an environmental audit (Reference 4). As part of the process, Ott recommended installation of and subsequently installed four monitor wells around the facility (MW-1, MW-2, MW-3, and MW-4). When the first set of samples were analyzed, Ott further recommended and subsequently installed a fifth well, capable of pumping groundwater to a recovery tank (PW-5 or PW-1). There is no evidence or documentation that the PW-5 recovery well was ever utilized. WPC also has a water well (WW-1) for process use only at a depth of 300 feet. No other groundwater wells are reported in the vicinity.

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Levels of arsenic, chromium, and PCP greater than the maximum contaminant level (MCL) have been detected in shallow groundwater at approximately 40 feet historically. Table 3-2 lists contaminant concentrations.

3.3.3 Well Head Protection Areas

No Well Head Protection Areas have been identified within 4 miles of the site.

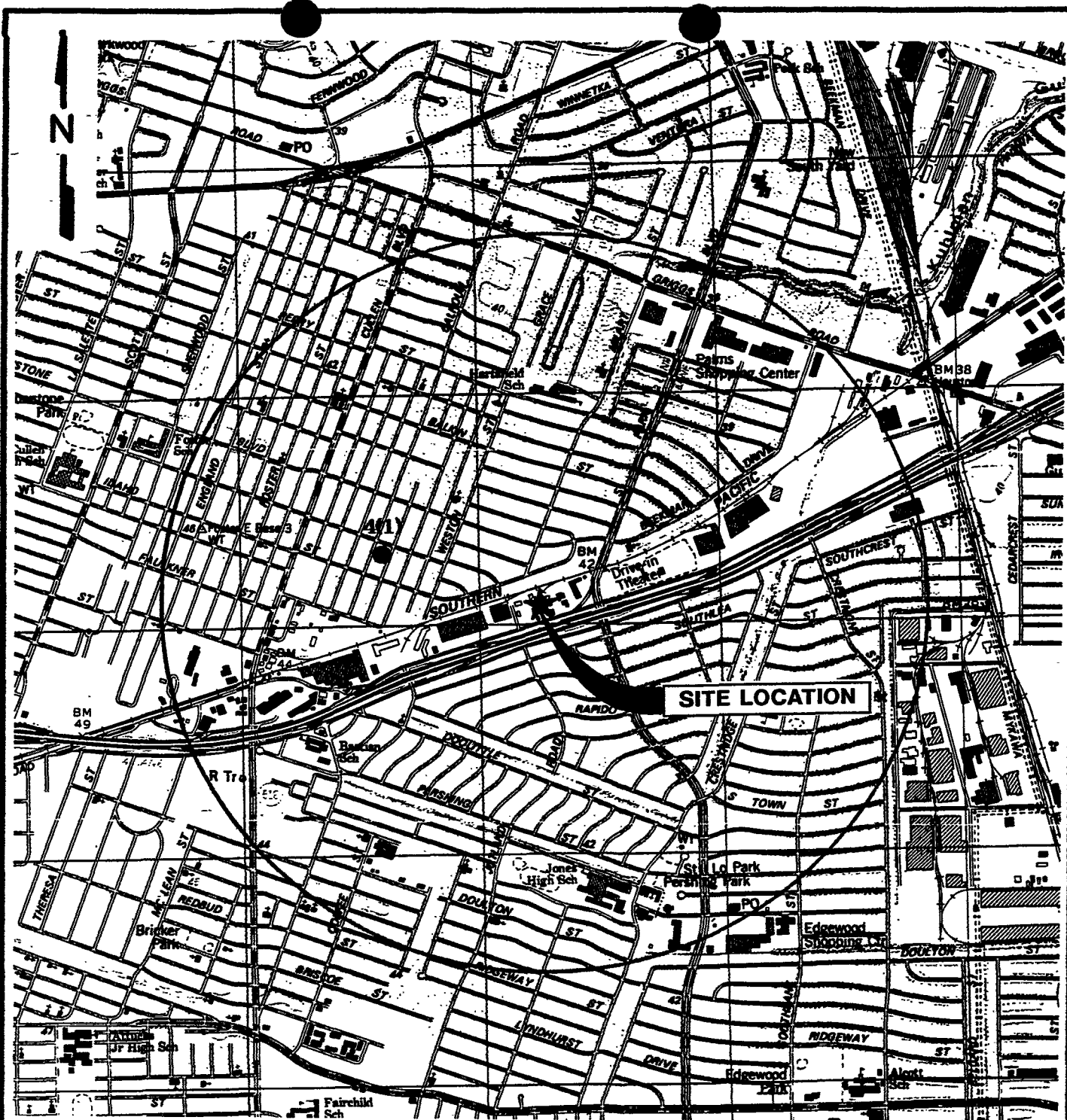
3.3.4 Groundwater Resources

Groundwater resource uses may include irrigation, watering of commercial livestock, commercial food preparation, commercial aquaculture, and water recreation (Reference 17).

3.4 GROUNDWATER PATHWAY CONCLUSIONS

Based on the PA site reconnaissance and available information regarding the site history, a release to groundwater is of minimal concern for the following reason:

- Contamination is shown in shallow groundwater at approximately 40 feet with no targets. Water wells in the area are greater than 400 feet deep; therefore, the shallow contamination will not infiltrate deep aquifers.



BASE MAP FROM:
U.S. DEPT. OF THE INTERIOR
GEOLOGICAL SURVEY
PARK PLACE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)
1982 SERIES

0 1000 2000
SCALE IN FEET

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FIGURE 3-1

WATER WELL LOCATIONS
WOOD PROTECTION COMPANY
HOUSTON, TEXAS

CERCLA ID. NO. : TX0059345116

EPA REGION 6
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W.O. NO. : 11098-122-033-0001

PRELIMINARY ASSESSMENT REPORT

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

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**TABLE 3-1
WATER WELL LOCATIONS**

WELL ID	WELL OWNER	APPROXIMATE DISTANCE FROM SITE (miles)	TOTAL WELL DEPTH (feet)	DEPTH TO TOP OF SCREEN (feet)	ESTIMATED POPULATION SERVED	STATUS AND TYPE OF WELL
4(1)	Unknown ¹	¼	430	410 - 430	Unknown ¹	Active; Irrigation
4(1)	Unknown ¹	¼	430	410 - 430	2.6	Active; Domestic

Note:

1 The AIC does not have the information available.

SOURCES: USGS 7.5-Minute Topographic Maps (Reference 2).
AIC (Reference 21).

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TABLE 3-2
CONTAMINATED WATER WELL DATA

WELL NUMBER ¹	DATE COLLECTED	HAZARDOUS SUBSTANCES (mg/L)				REF.
		PCP	Arsenic	Chromium	Copper	
MCL ²	—	0.001	0.05	0.1	1.3 ³	14
MW-1 (88-1)	18 Nov 88	0.056	—	0.22	—	14
MW-2 (88-2)	6 Jan 89	1.17	—	—	—	14
	9 Oct 89	0.0062	—	—	—	14
	13 Dec 90	0.034	—	—	—	14
	4 Dec 91	0.027	—	—	—	14
MW-3 (89-3)	6 Jan 89	3.49	0.056	0.11	—	14
	6 Apr 89	15.00	—	—	—	14
	9 Oct 89	1.4	—	—	—	14
MW-4 (88-4)	6 Jan 89	0.015	—	—	—	14
	9 Oct 89	0.21	—	—	—	14
PW-5 (PW-1)	9 Oct 89	7.40	—	—	—	14
	13 Dec 90	10.800	—	—	—	14
	18 Apr 91	7.84	—	—	—	14
	4 Dec 91	4.4	—	—	—	14
	Oct 89	7.4	—	—	—	29
	Dec 90	10.8	—	—	—	29

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**TABLE 3-2 (Continued)
CONTAMINATED WATER WELL DATA**

WELL NUMBER ¹	DATE COLLECTED	HAZARDOUS SUBSTANCES (mg/L)				REF.
		PCP	Arsenic	Chromium	Copper	
PW-5 (PW-1) (Continued)	Apr 91	7.84	—	—	—	29
	Dec 91	4.4	—	—	—	29
	Jan 93	4.4	—	—	—	29
	Jun 94	1.5	—	—	—	29
	Feb 95	2.4	—	—	—	29
	Nov 96	0.287	—	—	—	29
	Feb 97	1.33	—	—	—	29
	Jun 97	2.05	—	—	—	29

Notes:

- 1 Water wells are located on-site (Figure 2-3).
- 2 MCLs from "Drinking Water Regulations and Health Advisories," United States Environmental Protection Agency, October 1996.
- 3 Action level for Copper = 1.3 mg/L; no MCL listed.

SOURCES: ES SSI, Part 2 (Reference 14).
Facsimile WPC (Reference 29).

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SECTION 4 SURFACE WATER PATHWAY

This section discusses the surface water pathway, one of four major pathways of potential hazardous waste migration or exposure assessed in this report. The types of surface water draining the site, the probable point of entry (PPE) for hazardous substances from the site to enter surface water, the likelihood of a release, and the potential targets of the pathway are discussed in this section.

4.1 HYDROGEOLOGIC SETTING

The WPC site is located in the San Jacinto River Basin (Reference 17). The facility is approximately 1 mile south of the intermittent Kuhlman Gully and 2 ½ miles from the perennial Braes Bayou. Braes Bayou flows north, then west to Buffalo Bayou.

On a more local scale, surface water at the site flows through an overland flow segment, enters the surface water at the PPE, and flows downstream through Braes and Buffalo Bayous. These segments of the surface water pathway are discussed in the following subsections.

4.1.1 Overland Flow Segment

Overland flow from sources at the site flows in two general directions. Most of the stormwater exits the facility at two stormwater drains or by sheet flow at the north edge of the property to a drainage ditch. The drainage ditch is oriented east and west with a westerly flow direction. The surface water flows generally northeast through the City of Houston storm system to the Kuhlman Gully. The Kuhlman Gully is an intermittent surface water body approximately 1 mile north of the site.

Some stormwater exits the south edge of the site to City of Houston storm sewers.

4.1.2 Probable Point of Entry

The PPE for a release of hazardous substances from a source at the site to a perennial-flowing surface water body occurs at the intersection of the Kuhlman Gully with Braes Bayou. This point is located approximately 2 ½ miles north/northwest of the site.

4.1.3 Surface Water Flow Path

The surface water pathway is illustrated in Figure 4-1. The flow path of the surface water from the PPE to a point 15 stream miles downstream in this pathway through Braes and Buffalo Bayous is summarized in Table 4-1.

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4.2 LIKELIHOOD OF RELEASE

Important factors related to the likelihood of a release from a source of hazardous substances at the site to surface water are presented in the following subsections.

4.2.1 Distance to Surface Water

The shortest distance from a source at the site to a perennial-flowing water body is approximately 2 ½ miles at the confluence of the Kuhlman Gully and Braes Bayou.

4.2.2 Flood Frequency

WESTON reviewed the Flood Insurance Rate Map (FIRM) to obtain floodplain maps for the site vicinity. According to the FIRM, the site is in the 500-year floodplain. (Reference 22).

4.2.3 2-Year, 24-Hour Rainfall

The 2-year, 24-hour rainfall for the area of the site is approximately 4 ½ inches (Reference 23).

4.2.4 Flood Containment

Based on observations during previous investigations and the PA site reconnaissance, secondary containment is provided around the treatment area to prevent or contain a release of hazardous substances in the unlikely event that the area should become flooded. Drainage from the treatment area is contained to treatment sumps for recycling. No potential hazardous waste source area exists because contaminated soil was removed in 1986, and the area was covered with a curbed concrete drip pad.

4.3 SURFACE WATER PATHWAY TARGETS

The potential targets of the primary surface water pathway include the population relying on surface water downstream of the PPE as a source of drinking water, as well as the downstream fisheries, sensitive environments, and surface water resources. The targets identified within the surface water pathway are discussed in the following subsections.

4.3.1 Drinking Water Intakes

No drinking water intakes are known to be present within the surface water pathway.

4.3.2 Wetlands and Other Sensitive Environments

According to federal wetlands inventory maps, no wetlands are present along the surface water frontage within 15 miles downstream of the PPE (Reference 24).

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Several federally listed threatened or endangered species are thought to potentially occupy the surface water pathway environments in the vicinity of the site (Reference 26). These are listed in Table 4-2.

4.3.3 Fisheries

No commercial fisheries have been identified within the surface water pathway. However, segments of this surface water pathway, Braes Bayou, or Buffalo Bayou may be used for recreational fishing (References 4, 5, 25). Fishing was not observed in these surface water bodies during the site reconnaissance (Reference 4).

4.4 SURFACE WATER PATHWAY CONCLUSIONS

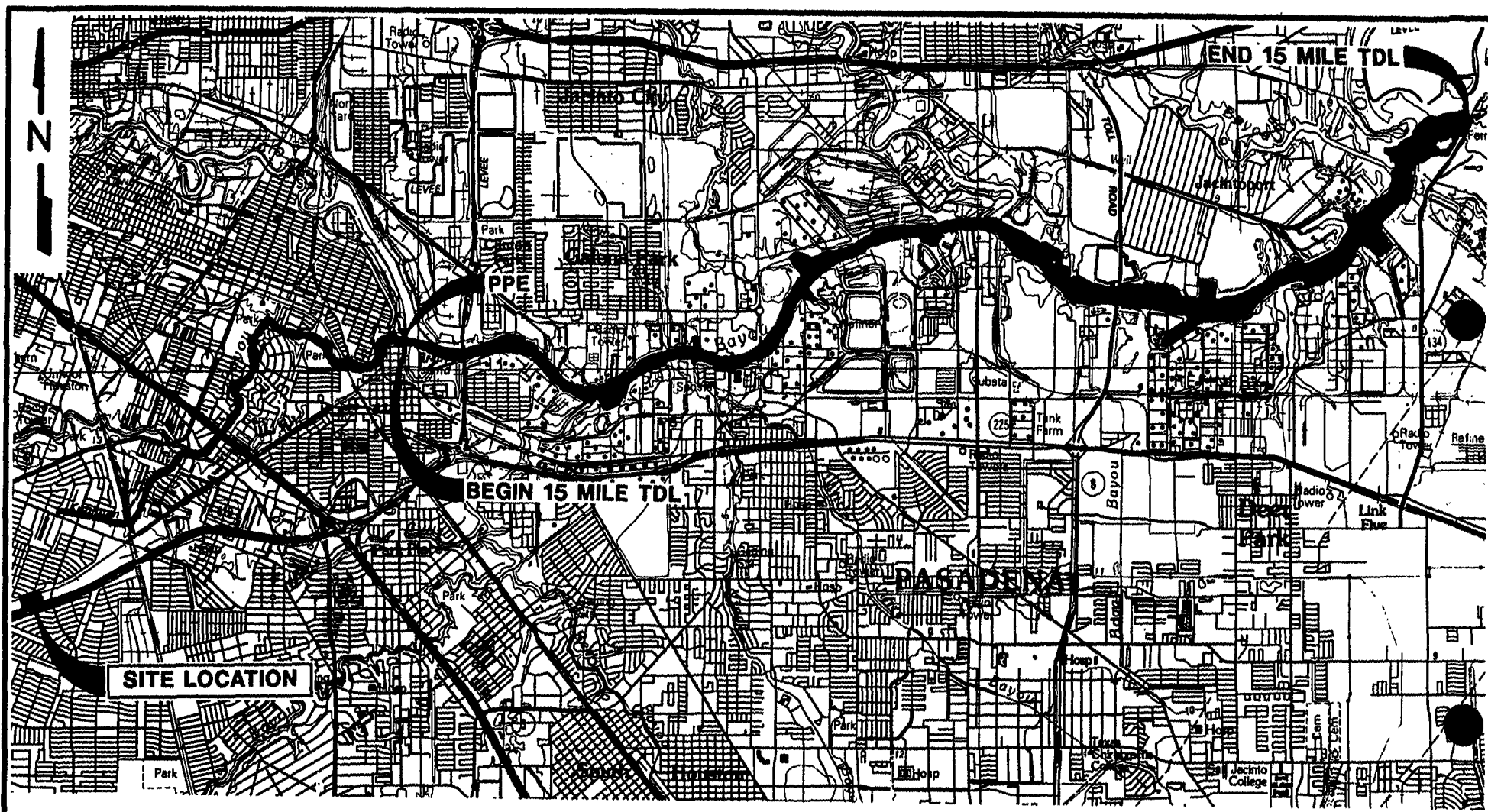
A release to the surface water pathway is of minimal concern for the following reasons:

- Containment is provided around the treatment area that would prevent migration of hazardous substances to the drainage ditches during rainfall events.
- The PPE is greater than 2 miles from the site.
- An observed release of hazardous substances to the surface water pathway attributable to the site has not been documented.

Remaining data gaps for the surface water pathway include the following:

- Documentation of recreational fishing in Braes and Buffalo Bayous.
- Specific location of the endangered species along the surface water pathway.
- Determination of actual overland surface water route (i.e., stormwater sewers, drainage ditch).

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TDL = TARGET DISTANCE LIMIT



BASE MAP FROM:
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GEOLOGICAL SURVEY
HOUSTON
TEXAS
30 x 60 MINUTE SERIES (TOPOGRAPHIC)
1992 SERIES
SCALE 1:100,000

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 4-1

SURFACE WATER PATHWAY MAP

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**TABLE 4-1
SURFACE WATER DRAINAGE PATHWAY SUMMARY**

SURFACE WATER SEGMENT	APPROXIMATE DISTANCE FROM A SOURCE AREA (miles)	APPROXIMATE DISTANCE FROM PPE (miles)	ESTIMATED FLOW RATE AND DIRECTION OF FLOW (cubic feet per second)
Kuhlman Gully	1	0	Intermittent
Braes Bayou	2 ½ (PPE)	0	100 ¹ - 1000 ¹
Buffalo Bayou	2 ½	1 ½	100 ¹ - 1000 ¹

Note:

1 This value is estimated based on size of the stream.

SOURCES: USGS 30-by-60-Minute Topographic Map (Reference 25).
USGS 7.5-Minute Topographic Maps (Reference 2).

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**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

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**TABLE 4-2
FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES**

TYPE	COMMON NAME	SCIENTIFIC NAME	STATUS	NOTES
Plant	Prairie dawn	<i>Hymenoxys texana</i>	Endangered	Not Applicable
Amphibian	Houston toad	<i>Bufo Houstonensis</i>	Endangered	Potential occurrence
Birds	Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	Endangered	Migrant
	Bald eagle	<i>Haliaeetus leucocephalus</i>	Endangered	Nesting activity and winter concentration
	Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered	Year-round resident

SOURCE: U.S. Fish and Wildlife Service (Reference 26).

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SECTION 5 SOIL EXPOSURE

Soil exposure is another potential route of exposure to hazardous substances attributable to the site. The discussion in this section focuses on the important soil exposure factors of soil type, area of contamination, accessibility and the likelihood of exposure, and the potential targets.

5.1 SURFICIAL CONDITIONS

Information regarding the surficial soil conditions at the site is summarized in this subsection.

5.1.1 Soil Type

The predominant soil type found at the WPC site is the Beaumont-Urban land complex (Reference 27).

The Beaumont soil makes up 15% to 80% of this mapping unit; Urban land 10% to 70%; and other soils 5% to 20%. The slope ranges from 0 to 1%, but averages about 0.3%.

Beaumont soils have a surface layer of very firm, very strongly acid, dark gray to gray clay about 21 inches thick. The surface layer grades gradually to a layer about 38 inches thick of very firm, strongly acid, gray clay that has intersecting slickensides. The next layer extends to a depth of 73 inches and is very firm, slightly acid, grayish-brown clay that has mottles of light olive brown and strong brown.

Urban land consists of soils that have been altered or obscured by buildings or other urban structures, making classification of the soils impractical.

5.1.2 Areas of Contamination

No areas of potential soil contamination on-site were observed during the reconnaissance activities (References 4 and 5).

Several soil and sediment samples were collected and analyzed during a 1993 ES SSI: two on-site (SO-4/SO-5 and SO-6) and one off-site (SO-3) soil samples, two off-site sediment samples (SE-1 and SE-2/SE-3), and a background soil sample (SO-1) across elevated railroad tracks. Table 5-1 summarizes contaminant concentrations, and sample locations are depicted in Figure 2-3. PCP, arsenic, chromium, copper, and lead are documented as existing at concentrations greater than 3 times background in off-site soil sample results. Arsenic, chromium, and lead are documented as existing at concentrations greater than 3 times background in on-site soil sample results. PCP was found in only SO-3. Low levels of semi-volatiles were present in SO-4/SO-5 and SO-6. The 1993 ES SSI calls the validity of the background sample into question, considering that common soil components such as calcium and magnesium levels were substantially different between background and other samples.

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5.2 LIKELIHOOD OF EXPOSURE

The following subsections present important factors related to the likelihood of exposure to an area of contaminated soil or direct contact with another source of hazardous substances.

5.2.1 Attractiveness of the Site

The attractiveness of the WPC site is considered low, as it is not used for recreational purposes (References 4 and 5).

5.2.2 Site Accessibility

Vehicular and pedestrian access is restricted by a locking gate across the entrance drive and a 10-foot chain link fence, topped with three-strand barbed wire (References 4 and 5).

5.3 SOIL EXPOSURE TARGETS

Potential targets of soil exposure are the resident population living or working in an area of soil contamination, the population living near areas of soil contamination, designated recreational areas, and terrestrial resources such as agriculture. The soil exposure targets identified are summarized in the following subsections.

5.3.1 Resident Population

The resident population for the site includes those persons in houses, schools, or day care facilities and workplaces who are on a property where soil contamination attributable to the site has been documented and whose residence is within 200 feet of that contamination. No on-site residents were identified during the site reconnaissance. The site is active, and the facility reportedly employs approximately 30 workers.

5.3.2 Nearby Population

The nearby population includes persons who live in houses or attend schools or day care centers within 1 mile of areas of soil contamination attributable to the site. Based on 1990 Census information, the nearby population within 1 mile of the WPC site is 10,381. See Table 5-2. Based on the reviewed file information, 2 day care centers are located 1,000 and 2,000 feet from the WPC site (Reference 3).

5.3.3 Terrestrial Sensitive Environments

Harris County, Texas, is a habitat for the Houston toad, Arctic falcon, red-cockaded woodpecker, and bald eagle, all of which are endangered species (Reference 26).

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5.3.4 Resources

No resources are known to exist at the site.

5.4 SOIL EXPOSURE CONCLUSIONS

Two areas of on-site soil contamination have been identified, and WESTON did not observe any additional potential areas of contamination during on-site reconnaissance activities. In addition, past migration may be attributed to the site based on off-site soil sample results. A sample taken near residences north of the WPC Facility showed no evidence of contamination attributable to the site operations. No evidence exists of further migration of contaminants by stormwater. Soil exposure appears to be of minor concern.

Remaining data gaps for soil exposure include the following:

- Determination of the extent of on-site contamination and off-site migration.
- The exact population within 1 mile and number of children at nearby daycares.
- Collection of a representative background sample.

PRELIMINARY ASSESSMENT REPORT

WOOD PROTECTION COMPANY
HOUSTON, TEXAS

EPA CERCLA ID NO.: TXD059345116

TABLE 5-1
CONTAMINATED SOIL DATA

SAMPLE ID ¹	DATE COLLECTED	HAZARDOUS SUBSTANCES	CONCENTRATION ² (mg/L)	SO-1 BACKGROUND (mg/L)	3X BACKGROUND (mg/L)
SEMIVOLATILE ORGANICS					
SO-3	Feb 93	Hexachlorobenzene	0.370 J	< 0.370	1.11
SO-3	Feb 93	Pentachlorophenol	17.000 J ³	< 0.900	2.70
SO-3	Feb 93	Benzo(a)pyrene (PAH)	0.480 J	< 0.370	2.70
SO-4 ⁴	Feb 93	Benzo(a)pyrene (PAH)	0.080 J	< 0.370	2.70
SO-5 ⁴	Feb 93	Benzo(a)pyrene (PAH)	0.073 J	< 0.370	2.70
SO-6	Feb 93	Benzo(a)pyrene (PAH)	0.200	< 0.370	2.70
PESTICIDES					
SO-4 ⁴	Feb 93	Heptachlor	0.0021	0.0029	0.03
SO-5 ⁴	Feb 93	Heptachlor	0.0018	0.0029	0.03
SO-6	Feb 93	Heptachlor	0.0023	0.0029	0.03
SE-1	Feb 93	Heptachlor	0.0042	0.0029	0.03
SE-2 ⁴	Feb 93	Heptachlor	0.0022	0.0029	0.03
SE-3 ⁴	Feb 93	Heptachlor	0.0023	0.0029	0.03
SE-1	Feb 93	Endrin	0.0043	< 0.0037	0.01
METALS					
SO-3	Feb 93	Arsenic	2.030	< 0.0012	0.0036
SO-4 ⁴	Feb 93	Arsenic	0.245	< 0.0012	0.0036
SO-5 ⁴	Feb 93	Arsenic	0.229	< 0.0012	0.0036
SO-6	Feb 93	Arsenic	0.348	< 0.0012	0.0036
SE-1	Feb 93	Arsenic	0.0624	< 0.0012	0.0036
SE-3	Feb 93	Arsenic	0.0771	< 0.0012	0.0036

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TABLE 5-1 (Continued)
CONTAMINATED SOIL DATA

SAMPLE ID ¹	DATE COLLECTED	HAZARDOUS SUBSTANCES	CONCENTRATION ² (mg/L)	SO-1 BACKGROUND (mg/L)	3X BACKGROUND (mg/L)
SO-3	Feb 93	Chromium	2.610	0.0088	0.03
SO-4 ⁴	Feb 93	Chromium	0.665	0.0088	0.03
SO-5 ⁴	Feb 93	Chromium	0.630	0.0088	0.03
SO-6	Feb 93	Chromium	0.738	0.0088	0.03
SE-1	Feb 93	Chromium	0.138	0.0088	0.03
SO-3	Feb 93	Copper	2.760	0.0062	0.02
SO-3	Feb 93	Lead	0.131	0.0096	0.03
SO-4 ⁴	Feb 93	Lead	0.0233	0.0096	0.03
SO-5 ⁴	Feb 93	Lead	0.024	0.0096	0.03
SO-6	Feb 93	Lead	0.0446	0.0096	0.03
SE-1	Feb 93	Lead	0.011	0.0096	0.03
SE-2 ¹	Feb 93	Lead	0.016	0.0096	0.03
SE-3 ⁴	Feb 93	Lead	0.0191	0.0096	0.03

Notes:

- 1 Sample locations are shown on Figure 2-3.
- 2 A "J" qualifier indicates that the associated value is an estimated quantity.
- 3 Shaded sample concentrations are those in excess of 3 times background.
- 4 Sample SO-5 is a field duplicate of SO-4; sample SE-3 is a field duplicate of SE-2.

SOURCE: ES SSI, Part 2 (Reference 14).

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PRELIMINARY ASSESSMENT REPORT

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

EPA CERCLA ID NO.: TXD059345116

**TABLE 5-2
NEARBY POPULATION WITHIN 1 MILE**

DISTANCE INTERVAL (miles)	ESTIMATED POPULATION	REFERENCE
0 to ¼	610	2, 28
¼ to ½	1,833	2, 28
½ to 1	7,938	2, 28

SOURCES: USGS 7.5-Minute Topographic Map (Reference 2).
1990 Census Information (Reference 28).

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SECTION 6

AIR PATHWAY

The discussion in this section of the report focuses on the air pathway, another potential route of hazardous substance migration from the site. Atmospheric conditions, the likelihood of a release to air, and potential air pathway targets are identified below.

6.1 ATMOSPHERIC CONDITIONS

Information concerning the atmospheric conditions near the site is summarized in this subsection.

6.1.1 Meteorological Information

The average annual temperature is approximately 68 °F (Reference 19). The prevailing wind direction changes seasonally; wind roses are provided in Reference 13. Information concerning rainfall in the region is presented in Subsection 3.2.2 of this report.

6.1.2 Air Monitoring Results

Air monitoring was not completed as part of the WESTON site reconnaissance on 21 May 1997. The reconnaissance was performed in accordance with a site-specific HASP prepared prior to the investigation. The reconnaissance was performed using standard Level-D personal protection protocol. Air monitoring was not required. Conditions requiring upgrade in the level of personal protective equipment were not encountered by the field team.

6.2 LIKELIHOOD OF RELEASE

No release of hazardous substances from the potential sources at the site to the air pathway was observed during PA site reconnaissance activities. Based on the nature of hazardous constituents, a release to air is unlikely and is not suspected.

6.3 AIR PATHWAY TARGETS

The population, resources, and sensitive environments within 4 miles of the site are potential targets of a release of hazardous constituents to the air pathway. The targets identified for the air pathway are discussed in the following subsections.

6.3.1 Population Within 4 Miles

WESTON identified the approximate population residing in specific distance intervals within approximately 4 miles of the site (References 2 and 28). This population is summarized in Table 6-1.

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6.3.2 Sensitive Environments

Sensitive environments have been identified previously in this report. Surface water-related sensitive environments are described in Subsection 4.3, Surface Water Pathway Targets. Terrestrial sensitive environments are discussed in Subsection 5.3, Soil Exposure Targets.

6.3.3 Resources

Resources associated with the air migration pathway include commercial agriculture, commercial silviculture, and major designated recreational areas within ½ mile of a source at the site. Terrestrial resources that may be targets of the air pathway are identified in Subsection 5.3, Soil Exposure Targets.

6.4 AIR PATHWAY CONCLUSIONS

A release of hazardous constituents to the air pathway has not been documented. A release of hazardous substances to the air pathway is not a potential concern.

PRELIMINARY ASSESSMENT REPORT

**WOOD PROTECTION COMPANY
HOUSTON, TEXAS**

EPA CERCLA ID NO.: TXD059345116

TABLE 6-1

NEARBY POPULATION WITHIN 4 MILES

DISTANCE INTERVAL (miles)	ESTIMATED POPULATION	REFERENCE
0 to ¼	610	2, 28
¼ to ½	1,833	2, 28
½ to 1	7,938	2, 28
1 to 2	31,148	2, 28
2 to 3	48,859	2, 28
3 to 4	68,401	2, 28

SOURCES: USGS 7.5-Minute Topographic Map (Reference 2).
1990 Census Information (Reference 28).

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SECTION 7 CONCLUSIONS

The WPC Facility is an active wood preserving facility that covers approximately 5 acres. The facility operated from 1952 to the present. The property is located at 5151 South Loop East in Houston, Harris County, Texas. Prior to 1972, PCP was the wood treating chemical. Since then, CCA has been used. The site consists of office and shop buildings, warehouses, wood storage area, and a wood treating process area.

Concerns associated with the migration and exposure pathways are summarized as follows:

- Based on information presented in Section 3, the groundwater pathway is of minimal concern. Elevated concentrations of PCP were detected in on-site shallow (40 feet) monitoring well samples in past investigations. Groundwater used as water supply is at deeper (430 feet) locations in the site vicinity. Therefore, concern for contamination of drinking water aquifers is of little concern.
- Based on information presented in Section 4, the surface water pathway is of minimal concern. Containment is provided around the process area that would prevent migration of hazardous substances to the drainage ditches during rainfall events. Perennial surface water is encountered approximately 2 ½ miles north/northwest of the site boundary. The surface water pathway concern for contamination is small.
- Based on information presented in Section 5, the soil exposure pathway is of minor concern. Two areas of on-site soil metals contamination have been identified. One area of off-site soil PCP and metals contamination was identified in past investigations. Evidence of off-site chemical migration exists, but no sampling has identified the extent of contamination, and further migration is not anticipated based on area conditions and the limited source area and low concentrations of contaminants.
- Based on information provided in Section 6, the air pathway is of no potential concern. Tanks in the treatment area do not contain volatile contaminants of concern. This would preclude a significant release of hazardous constituents to air.

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SECTION 8 REFERENCES

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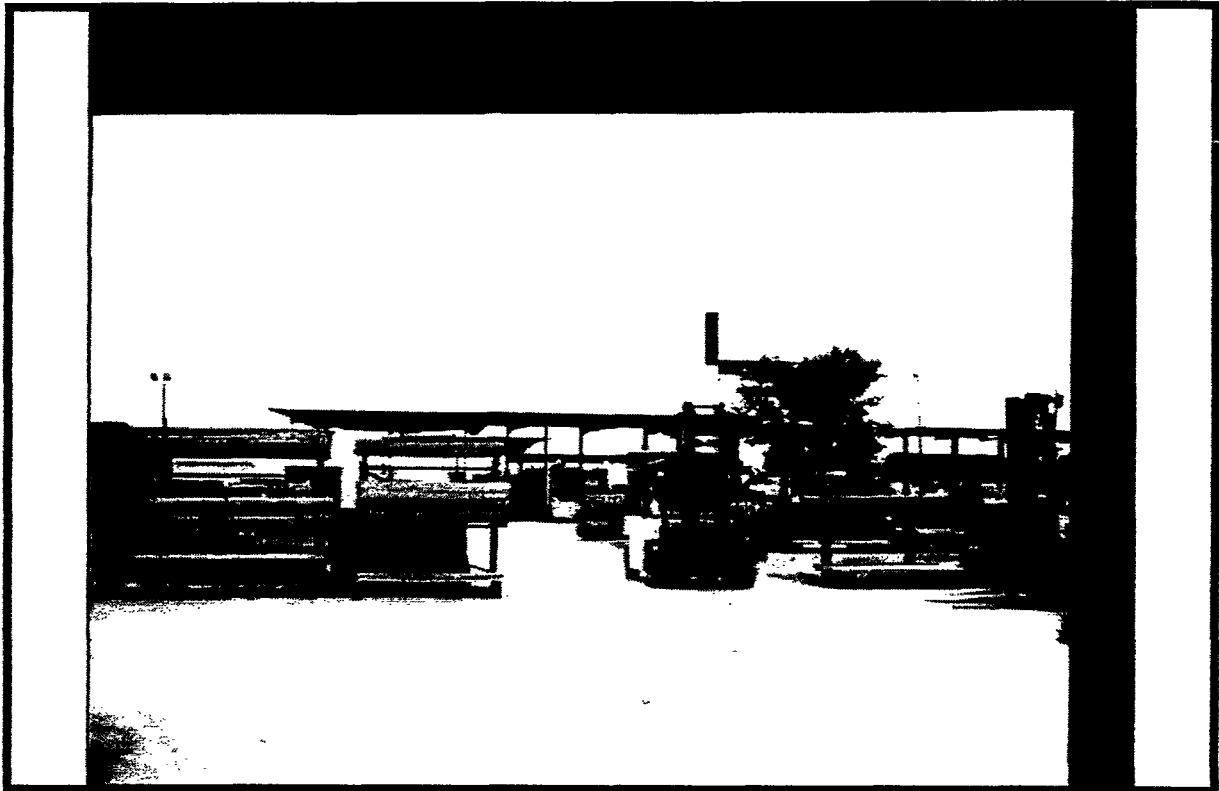
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APPENDIX A

PHOTOGRAPH DOCUMENTATION

Photograph: 1



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	(Facing West) Treated wood storage area.

Photograph: 2



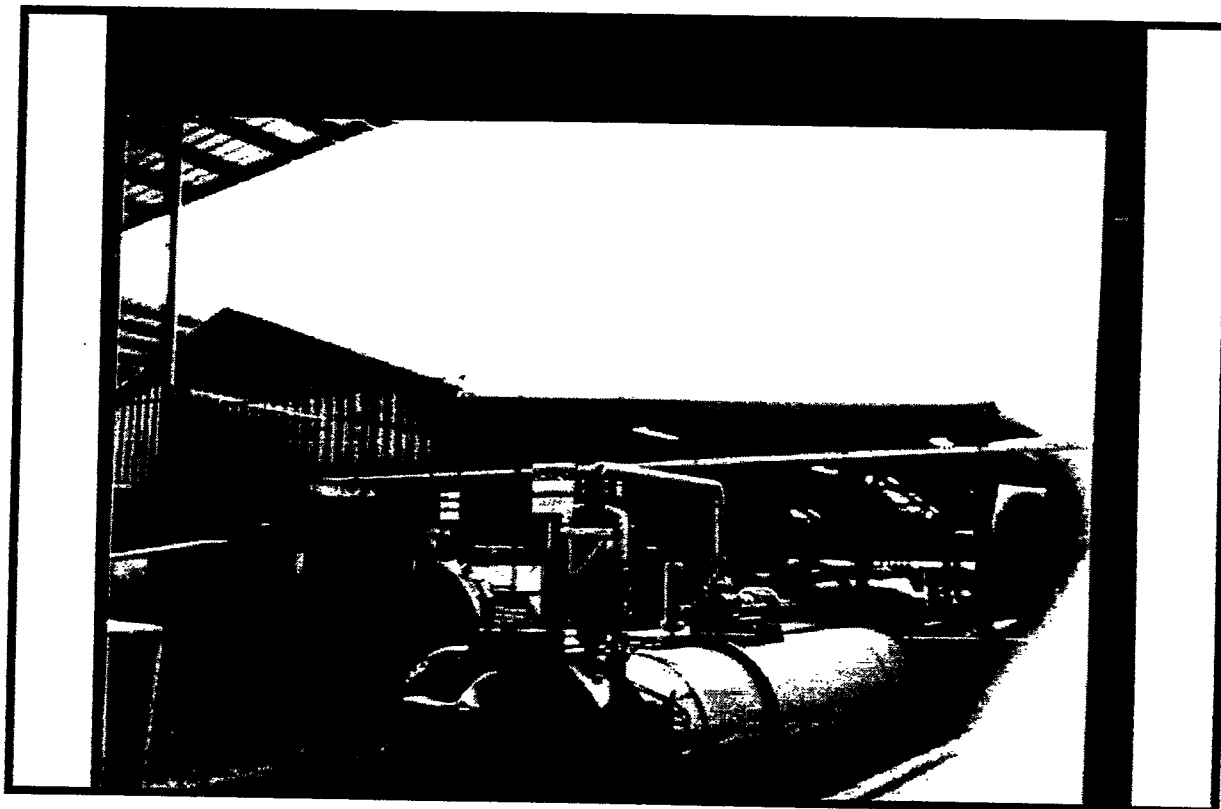
Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	(Facing East) Treated wood storage area.

Photograph: 3



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	3,000-gallon diesel tank in secondary containment.

Photograph: 4



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Process cylinders.

Photograph: 5



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Sump in front of cylinders.

Photograph: 6



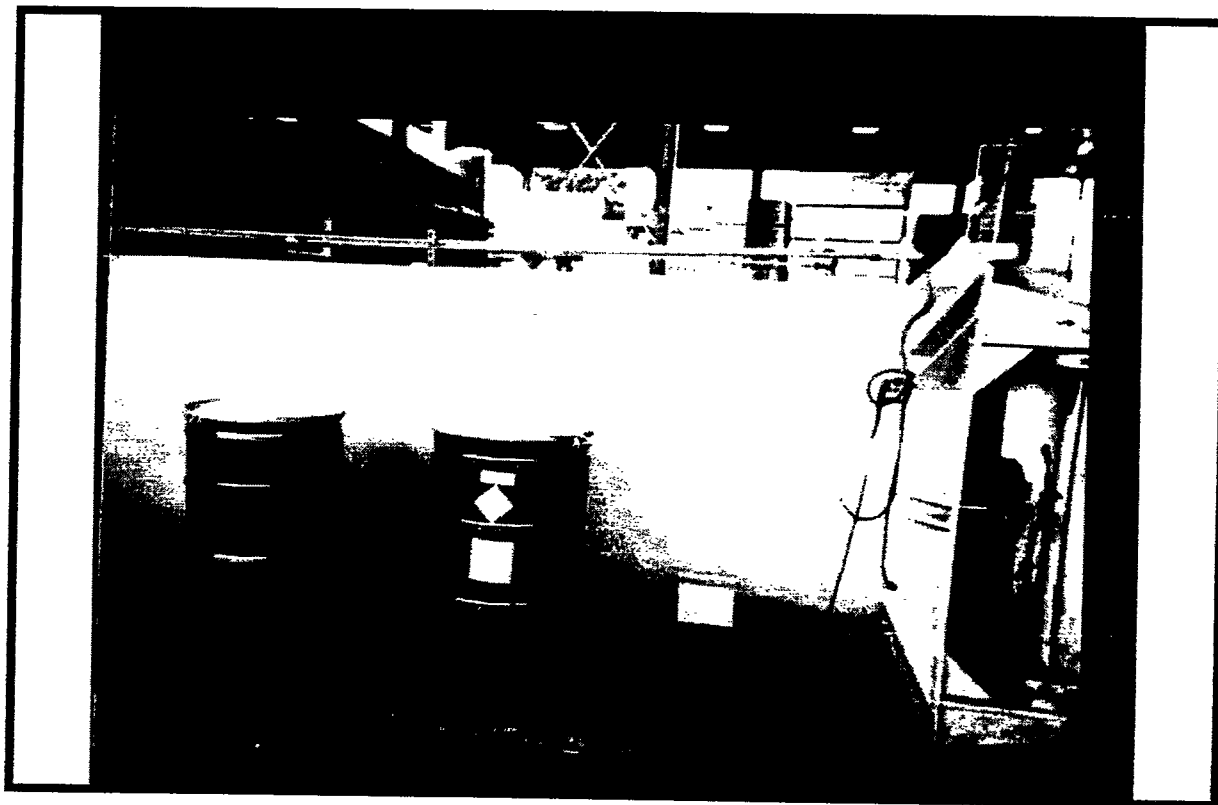
Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Decon pad at edge of concrete process area.

Photograph: 7



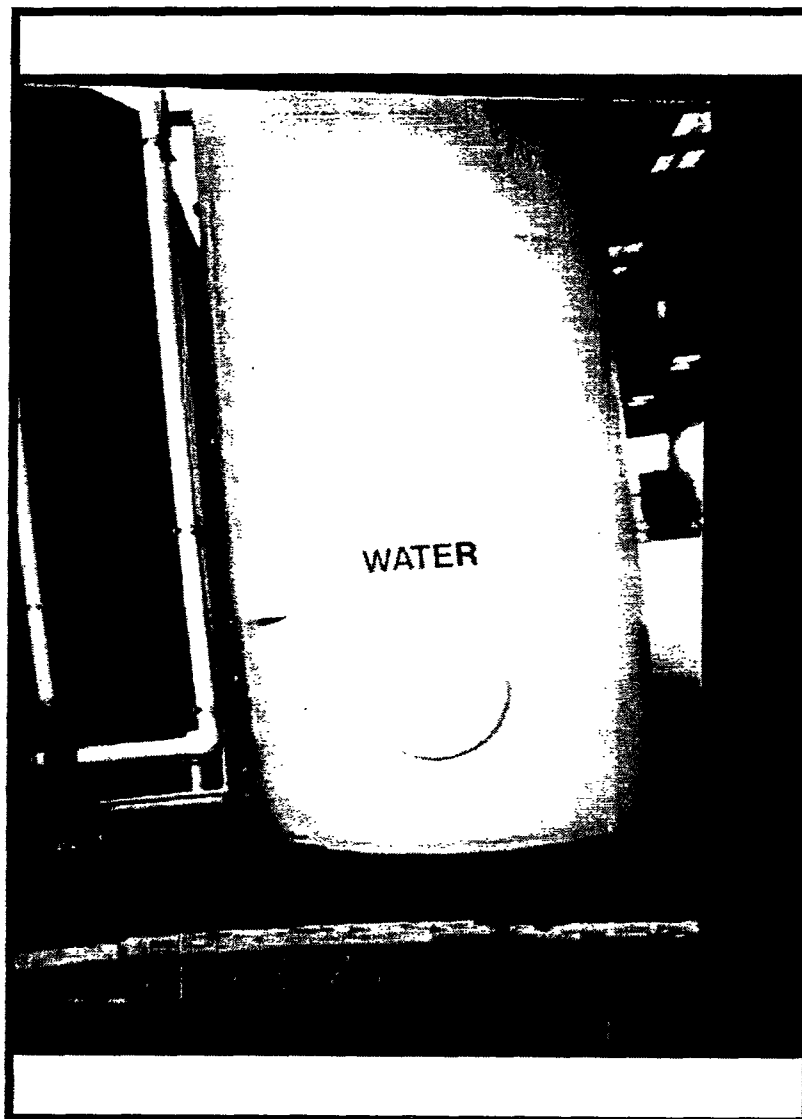
Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	End view of process cylinder.

Photograph: 8



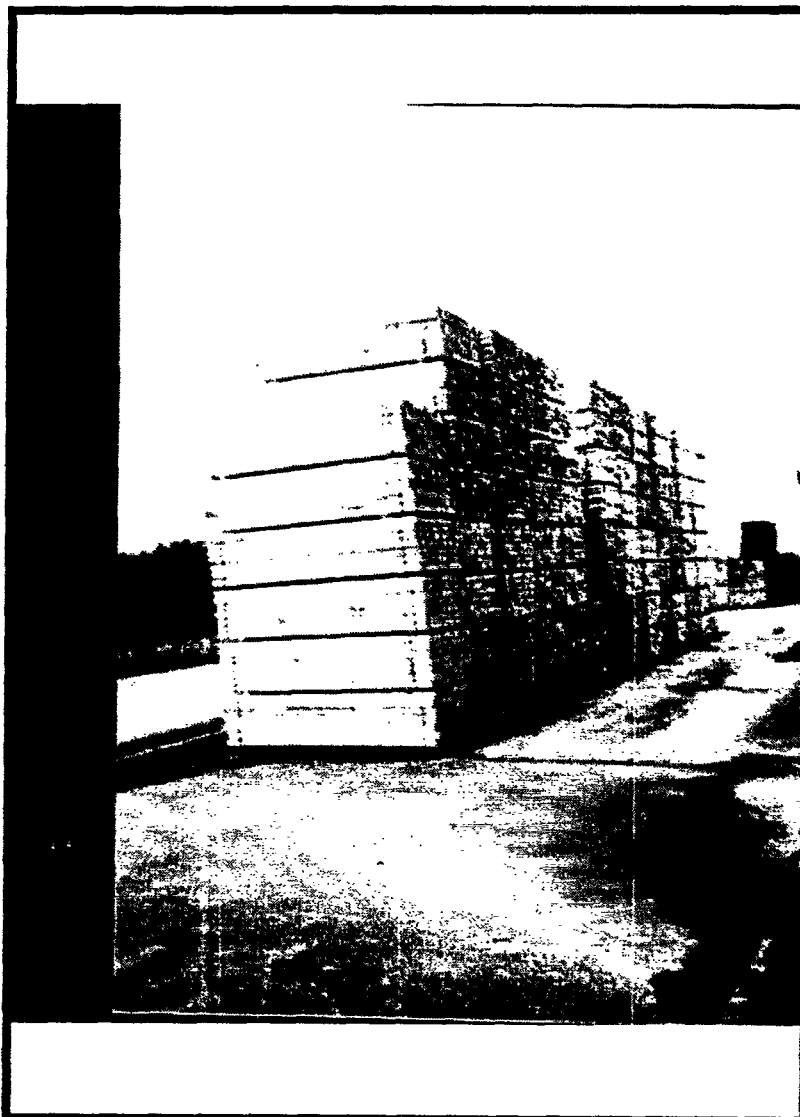
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Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Hazardous waste storage of treated lumber debris.

Photograph: 9



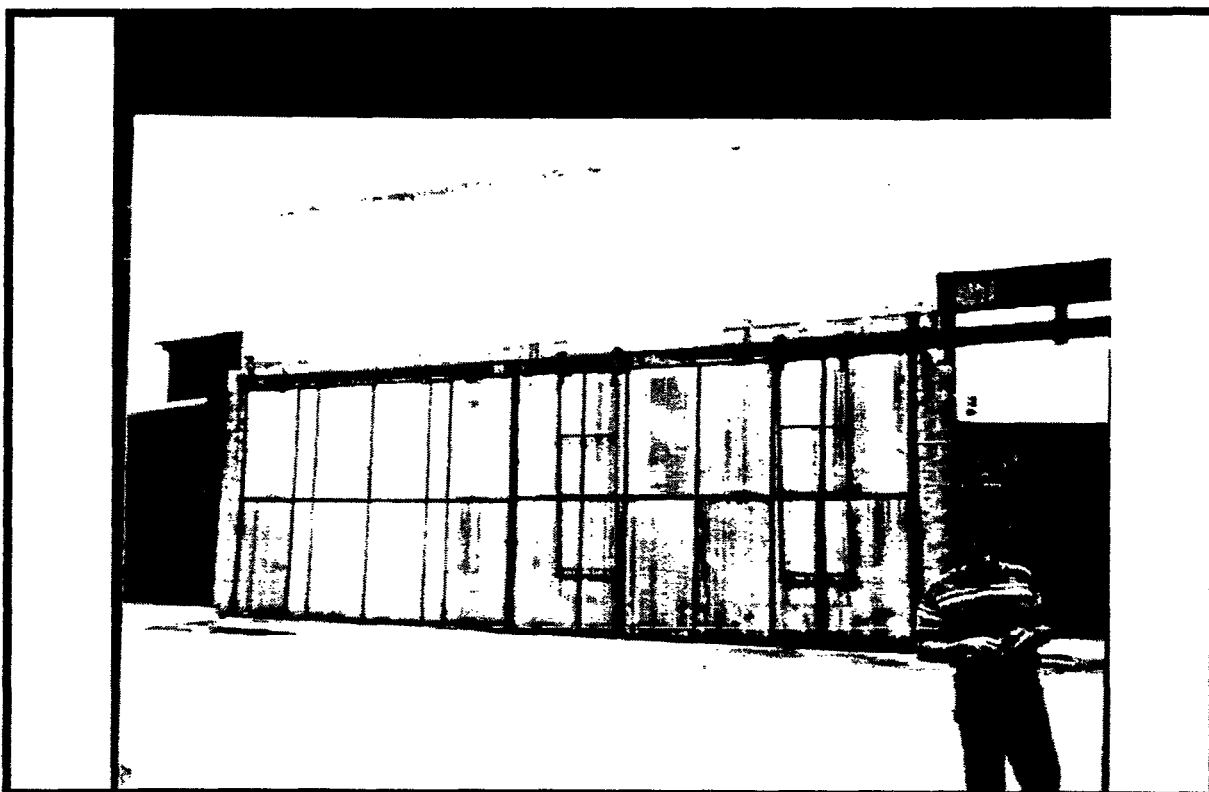
Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Water tank.

Photograph: 10



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Untreated lumber storage area.

Photograph: 11



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Drying kiln.

Photograph: 12



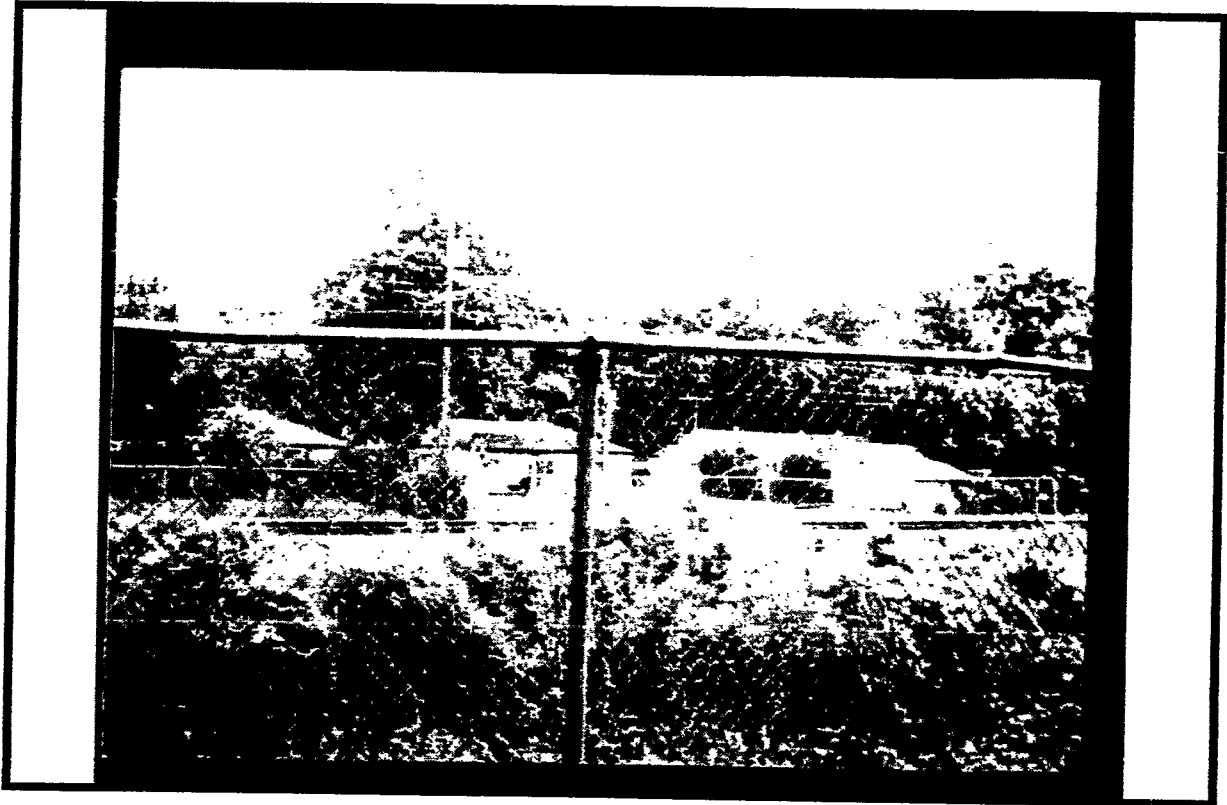
Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	East Stormwater Culvert.

Photograph: 13



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Drainage ditch on the north side of the site.

Photograph: 14



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	Neighborhood on the north side of the property.

Photograph: 15



Site Name:	Wood Protection Co.
Site Location:	Houston, TX
Weston Work Order:	11098-122-033-0001
Photographer:	Dennis Hayes
Witness:	Carol La Breche
Date of Photograph:	05/21/97
Description:	A warehouse.

APPENDIX B

REFERENCES

REFERENCE 1

LATITUDE AND LONGITUDE CALCULATION WORKSHEET
USING GEOGRAPHIC INFORMATION SYSTEM AND ArcCAD

SITE NAME: WOOD PROTECTION COMPANY CERCLIS #: TXD059345116

AKA: _____ SSID: _____

ADDRESS: 5151 SOUTH LOOP EAST

CITY: HOUSTON STATE: TEXAS ZIP CODE: 77233

SITE REFERENCE POINT: _____

USGS QUAD MAP NAME: PARK PLACE, TX. TOWNSHIP: _____ N/S RANGE: _____ E/W

SCALE: 1:24,000 MAP DATE: 1982 SECTION: _____ 1/4 _____ 1/4 _____ 1/4

MAP DATUM: (1927) 1983 (CIRCLE ONE) MERIDIAN: _____

COORDINATES FROM CONTROL POINT #1 (NORTHWEST 2.5' GRID TICK)

LONGITUDE: 29° 42' 30" LATITUDE: 95° 22' 30"

COORDINATES FROM CONTROL POINT #2 (SOUTHWEST 2.5' GRID TICK)

LONGITUDE: 29° 40' 00" LATITUDE: 95° 20' 00"

COORDINATES FROM CHECK POINT #3 (NORTHEAST 2.5' GRID TICK)

LONGITUDE: ____° ____' ____" LATITUDE: ____° ____' ____"

COORDINATES FROM CHECK POINT #4 (SOUTHEAST 2.5' GRID TICK)

LONGITUDE: ____° ____' ____" LATITUDE: ____° ____' ____"

1. INPUT FILE A:\WOOD\INPUT1

2. OUTPUT FILE A:\WOOD\OUTPUT1

3. INPUT FILE A:\WOOD\INPUT2

4. OUTPUT FILE A:\WOOD\OUTPUT2

SITE LATITUDE: 95° 20' 36.37"

SITE LONGITUDE: 29° 41' 08.45"

INVESTIGATOR: _____ DATE: _____

CAD OPERATOR David W. Malby DATE: 9/23/97

1) THE GEOGRAPHIC INFORMATION SYSTEM (GIS) AND ArcCAD WERE USED TO CALCULATE SITE LATITUDE AND LONGITUDE.

2) COORDINATE FILE PRINTOUT IS ATTACHED.

arcs:46032328:latlong.map(ass)

REFERENCE 2